

Name: \_\_\_\_\_ TP: \_\_\_\_\_

Failure to show work on any problem will result in LaSalle. Only circling an answer choice is NOT acceptable - show me how you are SOLVING these problems! The backside of this paper was left intentionally blank if you need extra space.

1)

The length of a rectangle is 6 inches longer than its width. If the perimeter of the rectangle is 48 inches, what is the width, in inches?

- F. 27  
G. 21  
H. 15  
J. 9  
K. 8

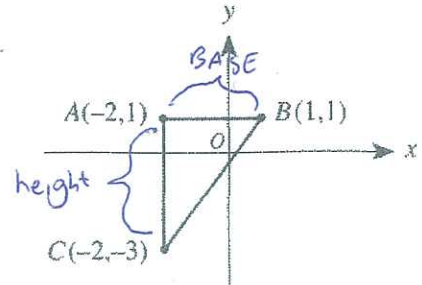


$$P = 2(l) + 2(w)$$

2)

In the standard (x,y) coordinate plane, if a triangle has vertices at A(-2,1), B(1,1), and C(-2,-3), what is its area in square coordinate units?

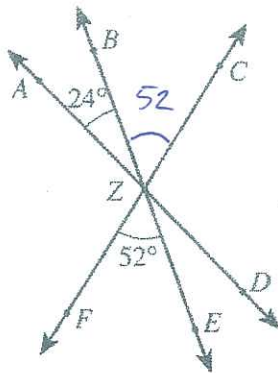
$$A = \frac{1}{2}bh$$



- A. 5  
B. 6  
C.  $\frac{15}{2}$   
D. 10  
E. 12

3)

In the figure below,  $\overleftrightarrow{AD}$ ,  $\overleftrightarrow{BE}$ , and  $\overleftrightarrow{CF}$  all intersect at point Z, with angle measures as marked. What is the measure of  $\angle CZE$ ?



- F.  $76^\circ$   
G.  $104^\circ$   
H.  $114^\circ$   
J.  $118^\circ$   
K.  $128^\circ$

4)

In the right triangle below, if  $\tan \theta = \frac{2}{\sqrt{77}}$ , then  $\sin \theta = ?$

① label



F.  $\frac{2}{9}$

G.  $\frac{4}{77}$

H.  $\frac{\sqrt{77}}{9}$

J.  $1 - \frac{2\sqrt{77}}{77}$

K.  $\sqrt{1 - \left(\frac{2\sqrt{77}}{77}\right)^2}$

② USE pythagorean theorem to find hyp.

$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

5)

The flight of a projectile is modeled by the function  $d = -5t^2 + 18t + 8$ , where  $d$  represents distance above the ground measured in meters, and  $t$  represents time of flight measured in seconds. According to this model, the projectile will hit the ground when  $t = ?$

- F. 1  
G. 2  
H. 4  
J. 4.4  
K. 5.2

$$0 = -5t^2 + 18t + 8$$

6)

The equation of the line containing one side of a rectangle in the standard (x,y) coordinate plane is  $y = \frac{3}{4}x - 2$ . If one of the following equations is a line containing an adjacent side, which equation must it be?

A.  $y = -3x + 3$

B.  $y = \frac{3}{4}x + 3$

C.  $y = -\frac{3}{4}x - 5$

D.  $y = \frac{4}{3}x + 1$

E.  $y = -\frac{4}{3}x - 4$

perpendicular to original eqn.



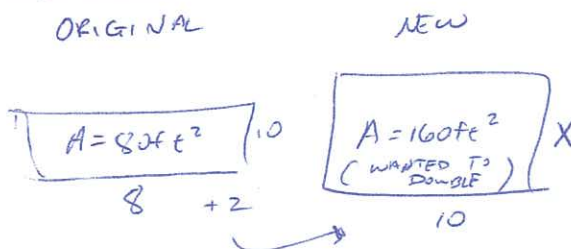
Name: \_\_\_\_\_ TP: \_\_\_\_\_

Failure to show work on any problem will result in LaSalle. Only circling an answer choice is NOT acceptable - show me how you are SOLVING these problems! The backside of this paper was left intentionally blank if you need extra space.

1)

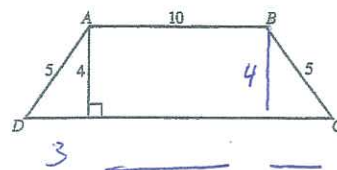
The owner of a dance studio wants to double the area of a rectangular 8-foot-by-10-foot dance floor. The 8-foot width will be increased by 2 feet. By how many feet must the length increase?

- A. 2
- B. 4
- C. 6
- D. 8
- E. 10



2)

In the figure below,  $\overline{AB}$  and  $\overline{CD}$  are parallel, and lengths are given in units. What is the area, in square units, of trapezoid  $ABCD$ ?

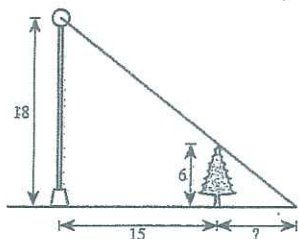


- A. 36
- B. 52
- C. 64
- D. 65
- E. 104

$$A = \frac{1}{2} (B_1 + B_2) h$$

3)

A 6-foot spruce tree is planted 15 feet from a lighted streetlight whose lamp is 18 feet above the ground. How many feet long is the shadow of that tree?

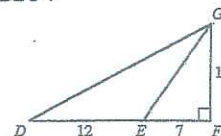


- A. 5.0
- B. 7.5
- C. 7.8
- D. 9.6
- E. 10.0

$$\frac{18}{6} = \frac{15}{x}$$

4)

In the figure below, the lengths of  $\overline{DE}$ ,  $\overline{EF}$ , and  $\overline{FG}$  are given, in units. What is the area, in square units, of  $\triangle DEG$ ?

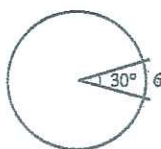


- A. 29
- B. 47.5
- C. 60
- D.  $6\sqrt{149}$
- E. 120

$$A = \frac{1}{2} BH$$

5)

If a central angle of measure  $30^\circ$  is subtended by a circular arc of length 6 meters is illustrated below, how many meters in length is the radius of the circle?



Circumference we don't know

$$\frac{30}{360} \times (2\pi r) = 6$$

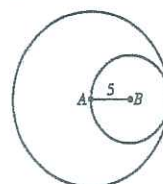
SOLVE FOR R

- A.  $\frac{\pi}{36}$
- B.  $\frac{1}{5}$
- C.  $\pi$
- D.  $\frac{36}{\pi}$
- E. 180

6)

In the figure below, the circle centered at  $B$  is internally tangent to the circle centered at  $A$ . The smaller circle passes through the center of the larger circle and the length of  $\overline{AB}$  is 5 units. If the smaller circle is cut out of the larger circle, how much of the area, in square units, of the larger circle will remain?

RADIANS of big circle is 10.



$$A = \pi r^2$$

- A.  $10\pi$
- B.  $25\pi$
- C.  $75\pi$
- D.  $100\pi$
- E.  $300\pi$



We're bringing ZESTY BACK. YEAH!

